WHAT IS CLAIMED IS:

1. A surface acoustic wave (SAW) identification tag, comprising:

a piezoelectric substrate having a SAW transducer located thereon;

a group of slots arranged by both pulse position and phase position on said substrate; and

a number of reflectors distributed among said slots such that said reflectors encode a number by both pulse position and phase position.

2. The SAW identification tag as recited in Claim 1 wherein said reflectors are arranged wherein said phase position is in quadrature.

3. The SAW identification tag as recited in Claim 1 further comprising a framing reflector located between said SAW transducer and said group.

4. The SAW identification tag as recited in Claim 1 further comprising a plurality of said groups separated by dead spaces.

5. The SAW identification tag as recited in Claim 1 wherein

said number is at least 8 bits long.

6. The SAW identification tag as recited in Claim 4 wherein said plurality of groups is at least four and said number is at least 32 bits long.

7. The SAW identification tag as recited in Claim 4 wherein said plurality of groups is at least twelve and said number is at least 96 bits long.

8. The identification tag as recited in Claim 1 wherein said SAW transducer is configured to produce a SAW having a frequency of between two and three gigahertz.

9. The identification tag as recited in Claim 1 wherein at least some of said reflectors are single strips of conductive material.

10. The identification tag as recited in Claim 1 wherein said number is unique to said tag.

11. The identification tag as recited in Claim 1 wherein said number contains data pertaining to an object associated with said tag.

12. The identification tag as recited in Claim 1 wherein said number includes an error detection portion.

13. A method of operating a surface acoustic wave (SAW) identification tag, comprising:

exciting a SAW transducer located on a piezoelectric substrate to create a SAW;

causing said SAW to reflect from reflectors distributed among a group of slots arranged by both pulse position and phase position on said substrate; and

demodulating reflected portions of said SAW to yield a number encoded by both pulse position and pulse position.

14. The method as recited in Claim 13 wherein four of said sub-slots are arranged wherein said phase position is in quadrature.

15. The method as recited in Claim 13 further comprising causing said SAW to reflect from a framing reflector located between said SAW transducer and said group.

16. The method as recited in Claim 13 further comprising causing said SAW to reflect from reflectors distributed among a plurality of said groups separated by dead spaces.

17. The method as recited in Claim 13 wherein said number is at least 8 bits long.

18. The method as recited in Claim 16 wherein said plurality of groups is at least four and said number is at least 32 bits long.

19. The method as recited in Claim 16 wherein said plurality of groups is at least twelve and said number is at least 96 bits long.

20. The method as recited in Claim 13 wherein said SAW has a frequency of between two and three gigahertz.

21. The method as recited in Claim 13 wherein at least some of said reflectors are single strips of conductive material.

22. The method as recited in Claim 13 wherein said number is unique to said tag.

23. The method as recited in Claim 13 wherein said number contains data pertaining to an object associated with said tag.

24. The method as recited in Claim 13 wherein said number includes an error detection portion.

25. A method of manufacturing a surface acoustic wave (SAW) identification tag, comprising:

forming a SAW transducer on a piezoelectric substrate; and

depositing reflectors among a group of slots arranged by both pulse position and phase position on said substrate, said reflectors encoding a number by both pulse position and phase position.

26. The method as recited in Claim 25 wherein said reflectors are arranged wherein said phase position is in quadrature.

27. The method as recited in Claim 25 further comprising depositing a framing reflector between said SAW transducer and said group.

28. The method as recited in Claim 25 further comprising a plurality of said groups separated by dead spaces.

29. The method as recited in Claim 25 wherein said number is at least 8 bits long.

30. The method as recited in Claim 28 wherein said plurality of groups is at least four and said number is at least 32 bits long.

31. The method as recited in Claim 28 wherein said plurality of groups is at least twelve and said number is at least 96 bits long.

32. The method as recited in Claim 25 wherein said SAW transducer is configured to produce a SAW having a frequency of between two and three gigahertz.

33. The method as recited in Claim 25 wherein at least some of said reflectors are single strips of conductive material.

34. The method as recited in Claim 25 wherein said number is unique to said tag.

35. The method as recited in Claim 25 wherein said number contains data pertaining to an object associated with said tag.

36. The method as recited in Claim 25 wherein said number includes an error detection portion.